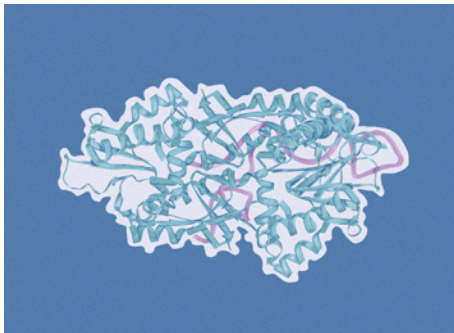


Kactus專注於設計和製造高純度極高活性的重組蛋白和酵素；產品涵蓋抗體藥物開發、免疫治療、基因治療和 mRNA 治療。

- 2400 多種現成重組蛋白可供選擇
- 提供客製化重組蛋白服務
- 透過Kactus專有的蛋白質工程平台SAMS™開發，使用領先的生物資訊、結構分析和 3D 建模最佳化 3D 蛋白質結構

Gene editing Enzymes



High editing efficacy in multiple cell types

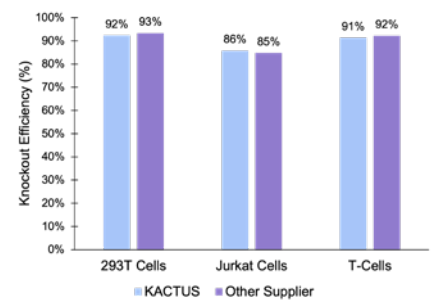
Recombinant CRISPR Cas9 GMP-Grade

DMF#036578

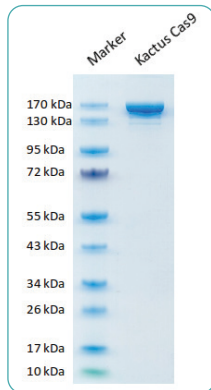
KACTUS 提供適用於製造細胞和基因療法的 GMP 級 CRISPR Cas9 enzyme。使用蛋白質工程平台 SAMS™，成功開發了一種高活性的 Cas9 蛋白。

Gene knockout efficiency analyzed in nucleofected 293T, Jurkat, and T cells using TIDE analysis. Results show greater than 95% editing efficacy across all three cell types, comparable to leading suppliers.

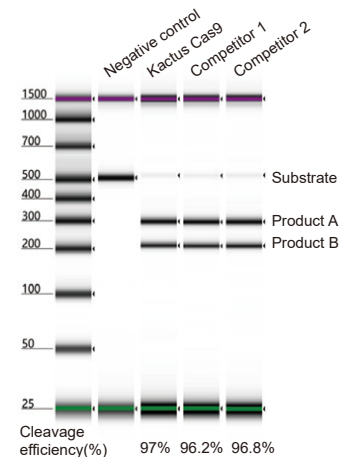
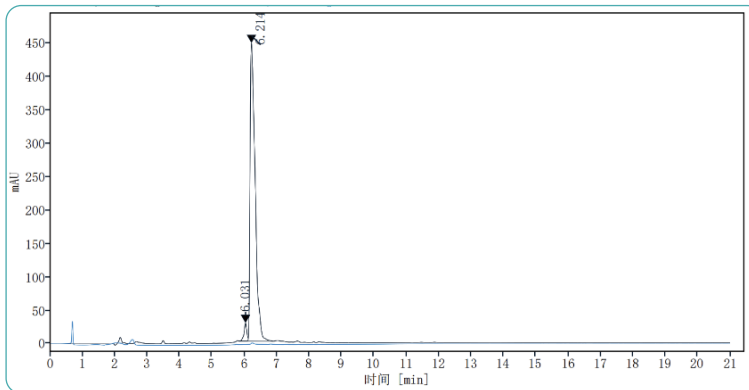
GMP DMF



SDS-PAGE



RP-HPLC



Cas9 核酸酶體外切割DNA底物實驗。如圖所示 Kactus Cas9 核酸酶的體外切割效率和其他品牌產品相當

SDS-PAGE 和 RP-HPLC 檢測 Kactus Cas9 的純度高於95%

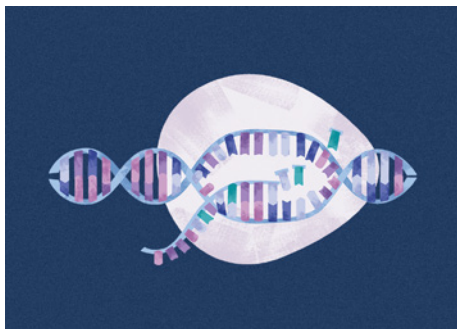
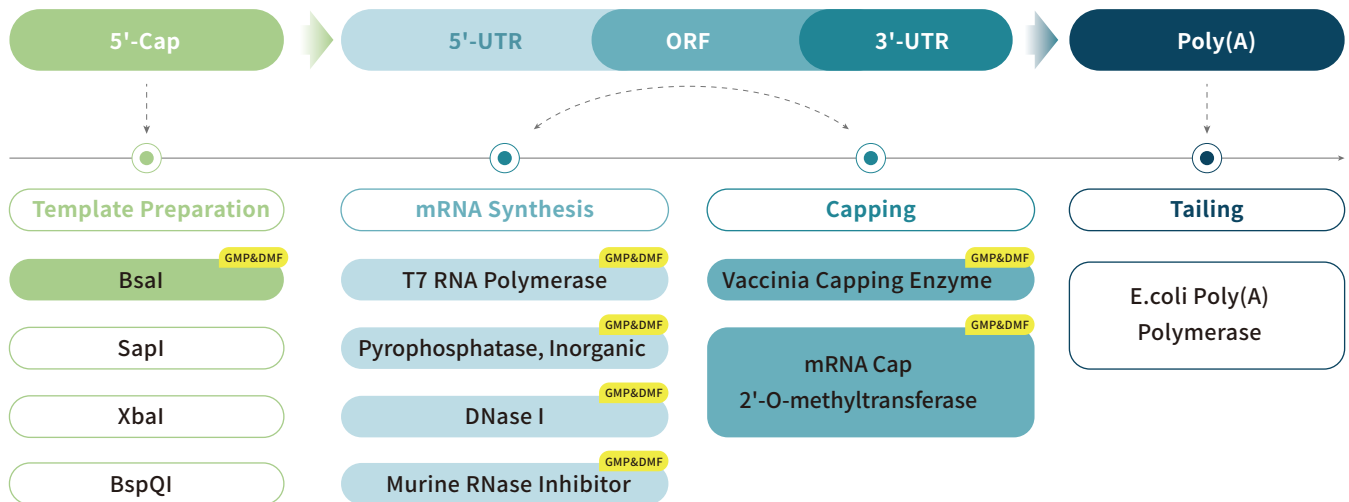
貨號	產品名稱	種屬	規格
CAS-EE109	CRISPR-Cas9 protein	S.pyogenes	1mg/3mg
GMP-CAS-EE109	CRISPR-Cas9 protein(GMP grade)	S.pyogenes	3mg
CAS-EE110	CRISPR-Cas9 protein	S.pyogenes	1mg/3mg
GMP-CAS-EE110	CRISPR-Cas9 protein(GMP grade)	S.pyogenes	3mg
CAS-MM00B	CRISPR-Cas9 protein ELISA Kit	/	96T
CAS-EE111	Recombinant S.p.Cas9 D10A Nickase	S.pyogenes	1mg
CAS-EE121	Recombinant A.s.Cas12a Nuclease	Acidaminococcus sp. BV3L6	1mg
CAS-EE123	Recombinant A.s.Cas12a plus Nuclease	Acidaminococcus sp. BV3L6	1mg
CAS-EE125	Recombinant L.b.Cas12a Nuclease	Lachnospiraceae bacterium	1mg
CAS-EE126	Recombinant L.b.Cas12a Nuclease	Lachnospiraceae bacterium	1mg

CRISPR/Cas9 Nuclease ELISA Kit

在 ex vivo 基因治療中，細胞經 CRISPR/Cas9 系統改造後，在回輸人體之前需對細胞中Cas9 核酸酶的殘留進行檢測。為此，Kactus精心開發了高靈敏、高特異性的殘留檢測試劑盒 CRISPR/Cas9 Nuclease ELISA Kit,其靈敏度可達：0.125 ng/ml。

Enzymes for mRNA Production GMP DMF

In vitro transcription, IVT 是在有DNA模板, RNA轉錄酶及NTP的條件下, 模擬細胞內mRNA轉錄的技術, 其中常用的啟動子為T7 promoter, 其轉錄強度較高, T7 RNA polymerase 對T7 promoter具有高度的特異性, 且其活性較高, 可合成高產量的mRNA



T7 RNA 聚合酶 GMP-Grade

DMF #037660

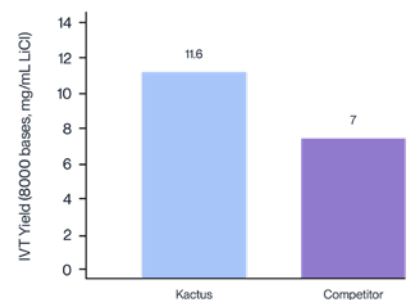
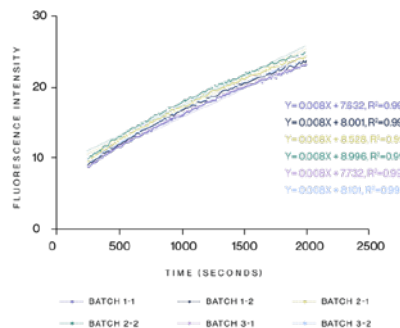
Kactus GMP 等級的T7 RNA 聚合酶經過精心設計, 可提供高 mRNA 產量和從 DNA 模板準確轉錄 mRNA。在最大限度地減少轉錄物中的 dsRNA 污染, 並且不含動物成分, 不含抗生素和動物衍生產品。

High yield for in vitro transcription

Consistent activity across batches

Low dsRNA in transcripts

In vitro transcription yield of T7 RNA Polymerase measured with Agilent 4150 TapeStation. KACTUS T7 has 65% higher yield than leading supplier.



Detection of T7 RNA Polymerase by molecular beacon. Three batches of T7 RNA Polymerase were analyzed, with similar reaction kinetics across all batches.

重組蛋白
Recombinant Protein Products

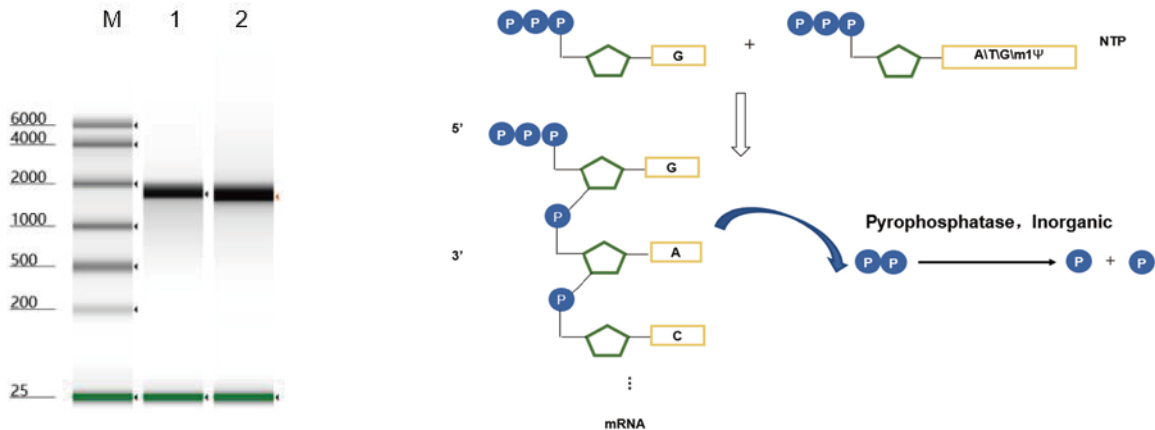
原廠型錄

mRNA疫苗及細胞&基因治療所需原料酶

原廠型錄

Pyrophosphatase, Inorganic GMP DMF

Pyrophosphatase, Inorganic 是由大腸桿菌表達的酵母來源的無機焦磷酸酶 (PPase)，可催化一分子無機焦磷酸鹽水解為兩分子正磷酸鹽，可用於IVT實驗中提高 mRNA 的產量。lane 1 without inorganic pyrophosphatase, lane 2 with inorganic pyrophosphatase



- Western Blot鑑別為陽性
- 可見異物每支/瓶不超過3個
- 純度不低於95% (SEC-HPLC)
- 活性不低於126 U/ml
- 核酸內切酶殘留陰性
- 核酸外切酶殘留陰性
- DNA酶殘留陰性
- 蛋白酶殘留陰性
- 重金屬殘留不高於10 ppm
- RNA酶殘留陰性
- 宿主DNA殘留不高於100 pg/ml
- 宿主蛋白殘留不高於20 ng/mg
- 細菌內毒素不高於10 EU/ml
- 微生物限度不高於1 CFU/10 ml
- pH 8.0 ± 0.5

貨號	產品名稱	規格
BSA-EE101	BsaI (20U/μl)	1000U/5000U
GMP-BSA-EE101	BsaI(20U/μl)(GMP grade)	20kU/400kU
T7P-EE101	T7 RNA Polymerase(50U/μl)	5000U/25kU
T7P-EE102	T7 RNA Polymerase Kit(50U/μl)	5000U/25kU
T7M-EE101	T7 RNA Polymerase Kit Plus(50U/μl)	5000U
T7C-EE101	T7 Co-transcription RNA Synthesis Kit(50U/μl)	10kU
GMP-T7P-EE101	T7 RNA Polymerase(50U/μl)(GMP grade)	50kU/1MU
VCS-VE101	Vaccinia Capping Enzyme(10U/μl)	500U/5000U
GMP-VCS-VE101	Vaccinia Capping Enzyme(10U/μl)(GMP grade)	10kU/1MU
MEH-VE101	mRNA Cap 2'-O-Methyltransferase(50U/μl)	2500U/25kU
GMP-MEH-VE101	mRNA Cap 2'-O-Methyltransferase(50U/μl)(GMP grade)	50kU/5MU
DNI-EE001	DNase I(4U/μl)	1000U/5000U
GMP-DNI-EE001	DNase I(4U/μl)(GMP grade)	4000U/40kU
RNI-ME001	Murine RNase Inhibitor(40U/μl)	2000U/10kU
GMP-RNI-ME101	Murine RNase Inhibitor(40U/μl)(GMP grade)	40kU/2.2MU
PYR-EE201	Pyrophosphatase, Inorganic(0.1U/μl)	10U/50U
GMP-PYR-YE101	Pyrophosphatase, Inorganic(0.1U/μl)(GMP grade)	100U/800U
PLA-EE101	<i>E. coli</i> Poly(A) Polymerase(5U/μl)	100U/500U
GMP-PLA-EE101	<i>E. coli</i> Poly(A) Polymerase(5U/μl)(GMP grade)	5kU/100kU

MaxNuclease™

GMP

DMF

MaxNuclease 是來源於 *Serratia Marcescens* 的廣譜核酸酶，可降解雙鏈、單鏈、環狀和線性 RNA 和 DNA 等任意形式的核酸，將它們消化為3-5個鹼基長度的5'-單磷酸寡核苷酸。本品利用 *E. coli* 大規模發酵表達純化，生產過程完全按照 GMP 生產標準進行，保證生產流程原材料的可追溯，是病毒類疫苗、病毒載體等行業中去除核酸的不二選擇！目前，該產品已通過美國 FDA DMF 備案，DMF 編號為036799。

主要應用

01
基因治療領域
去除核酸
如AAV純化

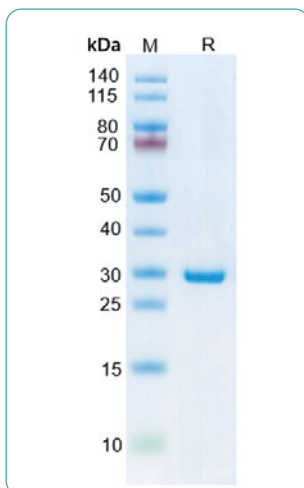
02
病毒類疫苗
去除外源核酸
降低核酸殘留的風險

03
去除病毒顆粒
表面的核酸
如慢病毒的純化

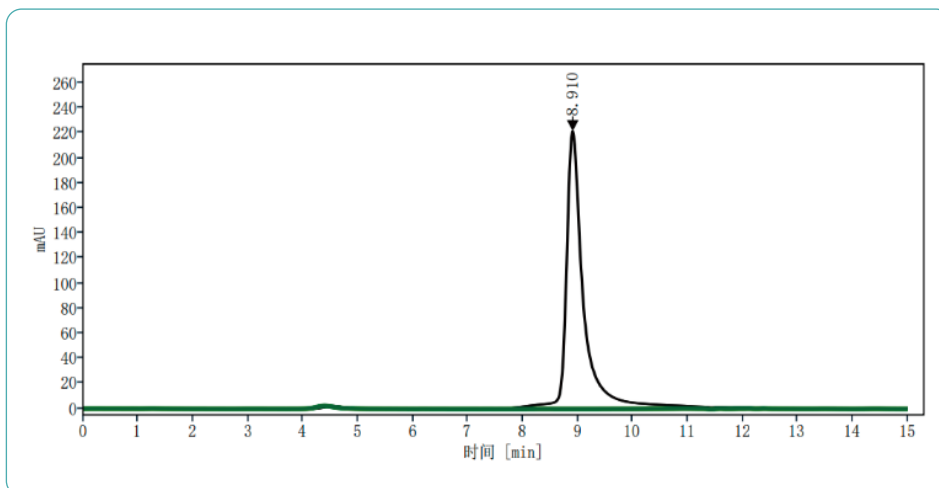
04
藥物純化過程中
去除核酸
提高蛋白回收產量

純度

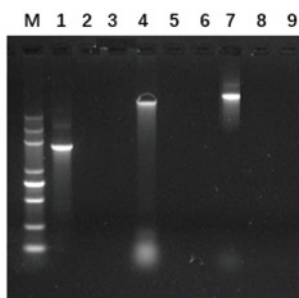
Tris-Bis-PAGE (≥95%)



SEC-HPLC (≥99%)



MaxNuclease 降解核酸效果



Lane M: DNA marker
Lane 1: PCR product
Lane 2: PCR product+1U MaxNuclease
Lane 3: PCR product+1U competitor
Lane 4: genomic DNA

Lane 5: genomic DNA+ 1U MaxNuclease
Lane 6: genomic DNA+ 1U competitor
Lane 7: plasmid DNA
Lane 8: plasmid DNA +1U MaxNuclease
Lane 9: plasmid DNA +1U competitor

